Armed Forces College of Medicine

AFCM

Neoplastic Diseases of Intestine

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INTENDED LEARNING OBJECTIVES (ILO)

By the end of this lecture you will be able to:

- Classify intestinal tumors and polypi
- Describe pathologic and complications of intestinal polypi / colorectal carcinoma
- Correlate pathologic features of neoplastic intestinal diseases with their clinical picture and complications
- Enumerate ulcers of intestine

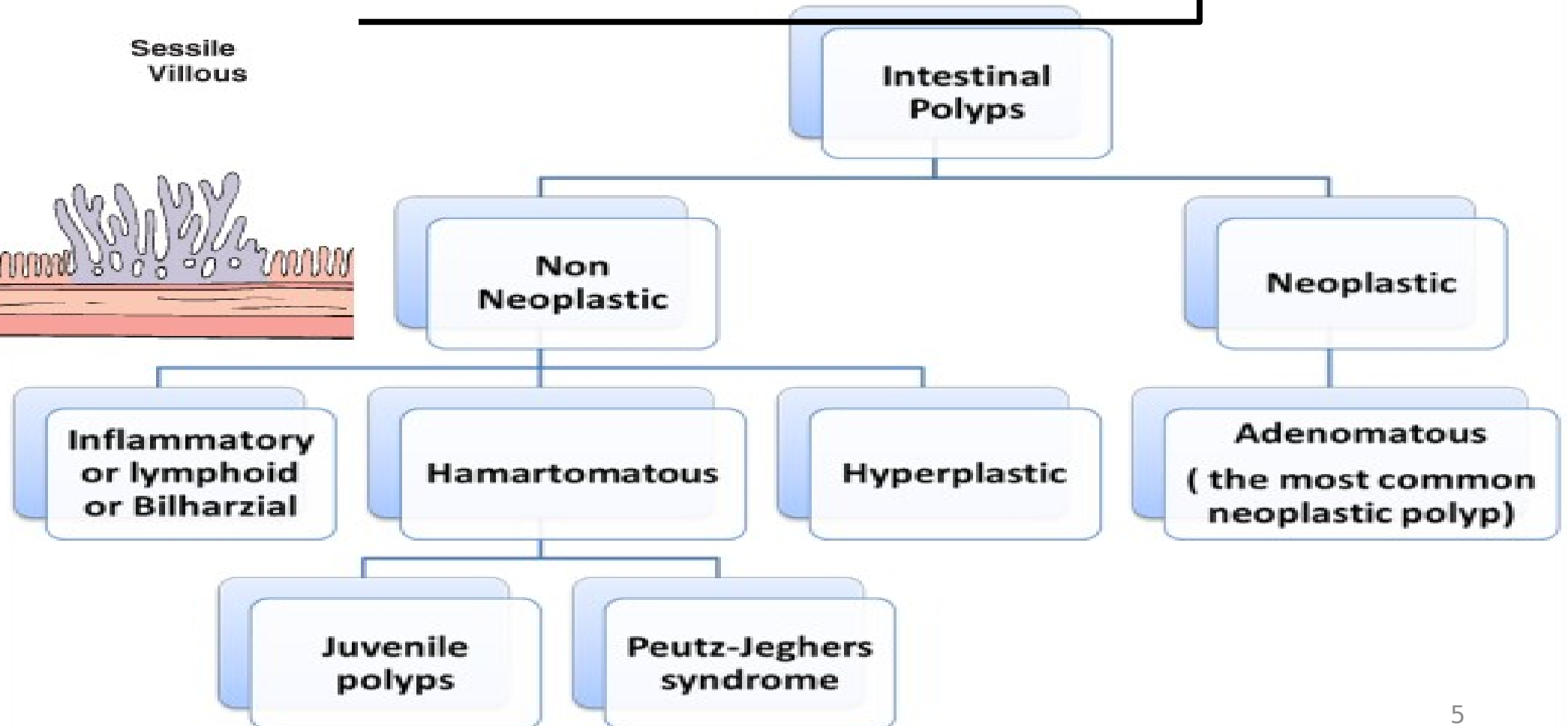
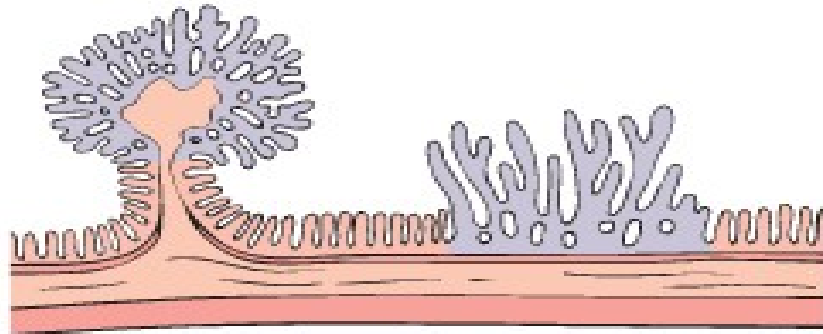
Lecture Plan

1. Part 1 (5mins): Tumours of intestine
2. Part 2 (20mins) :Intestinal polypi
3. Part 3 (20): Carcinoma of large intestine
4. Lecture Quiz (5 min)

Intestinal Polyps

Def: Elevation of the intestinal surface

ADENOMAS
Pedunculated Tubular
Sessile Villous

- Intestinal Polyps
  - Non Neoplastic
    - Inflammatory or lymphoid or Bilharzial
    - Hamartomatous
      - Juvenile polyps
      - Peutz-Jeghers syndrome
    - Hyperplastic
  - Neoplastic
    - Adenomatous (the most common neoplastic polyp)

NON NEOPLASTIC Intestinal Polyps

1- Hyperplastic polyps

- Proliferated glands –No dysplasia

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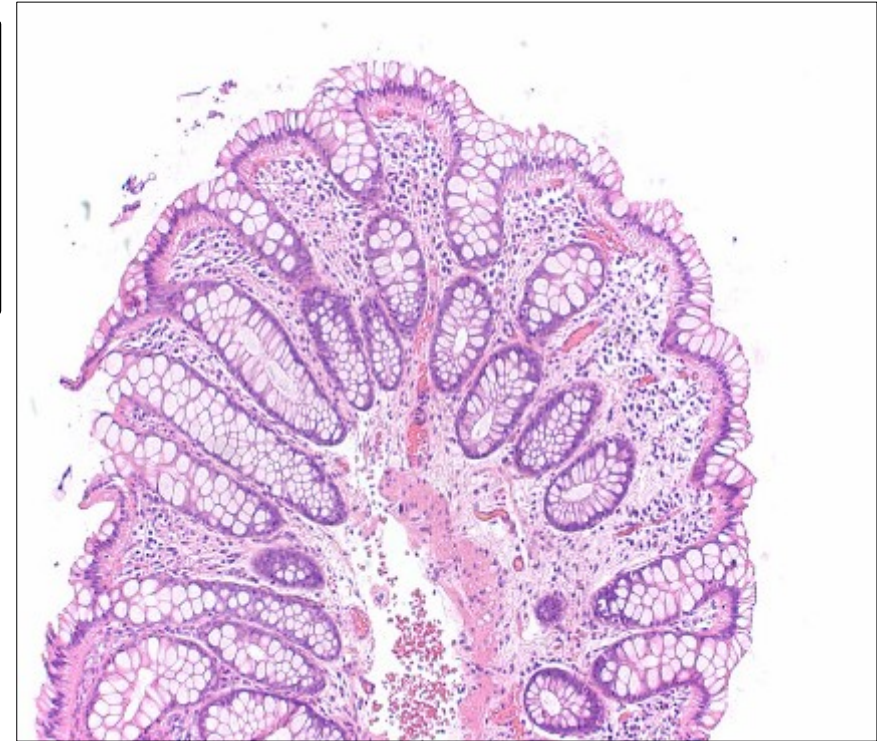
https://upload.wikimedia.org/wikipedia/commons/6/67/Sessile_serrated_adenoma_3_very_high_mag.jpg

NON NEOPLASTIC Intestinal Polyps

Hamartomatous polyps

a) Juvenile polyps

- Most common type in children.
- **Mic**: cystically dilated glands retained secretion.
- No malignant

b) Peutz-Jeghers syndrome

- Familial syndrome
- Multiple hamartomatous polyps
  + Mucocutaneous hyperpigmentation
- Has a malignant potential

Mucocutaneous= **face, lips, oral mucosa and digits**

NON NEOPLASTIC Intestinal Polyps

Hamartomatous polyps

a) Juvenile polyps

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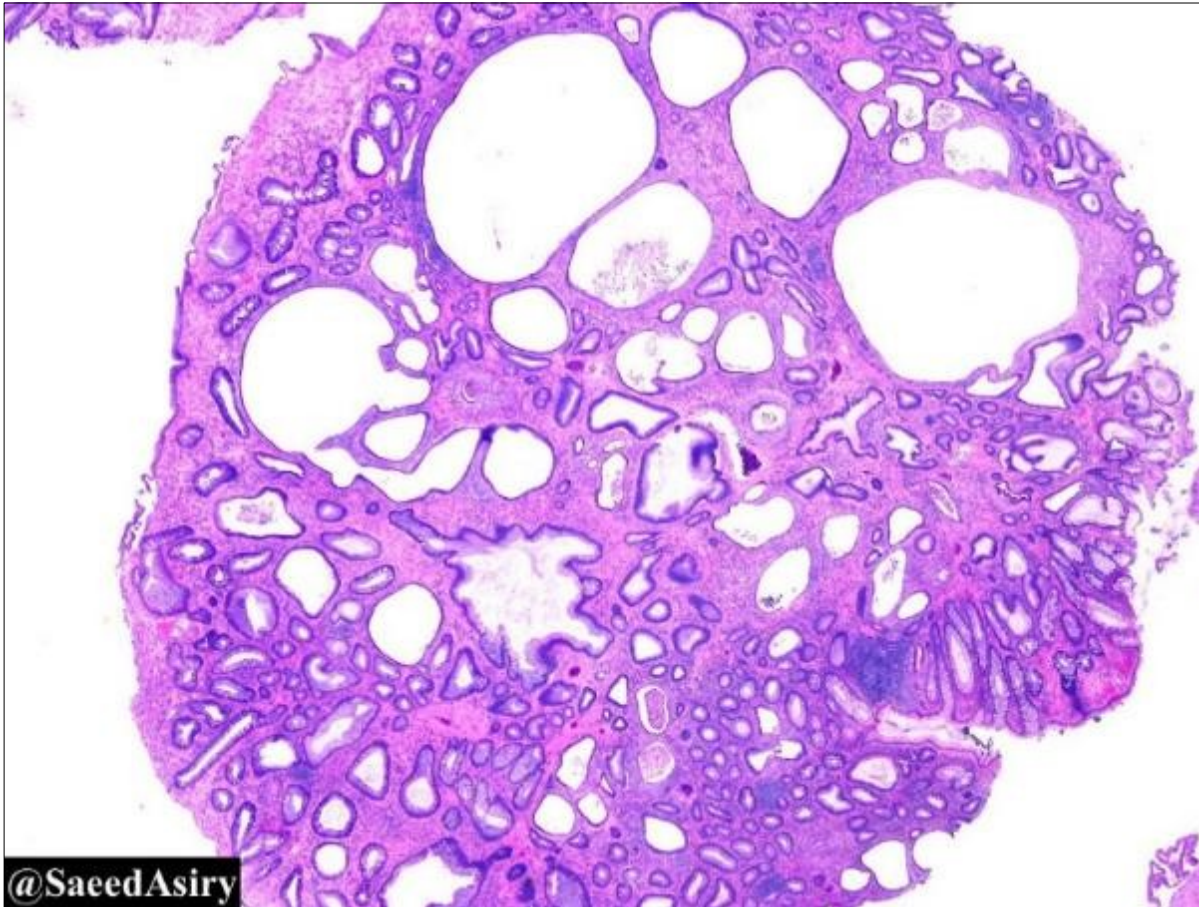
b) Peutz-Jeghers

NON NEOPLASTIC Intestinal Polyps

3-Bilharzial polyps

4-Inflammatory polyps (pseudopolyp):

as with ulcerative colitis

5-Lymphoid polyps:

Submucosal lymphoid follicles

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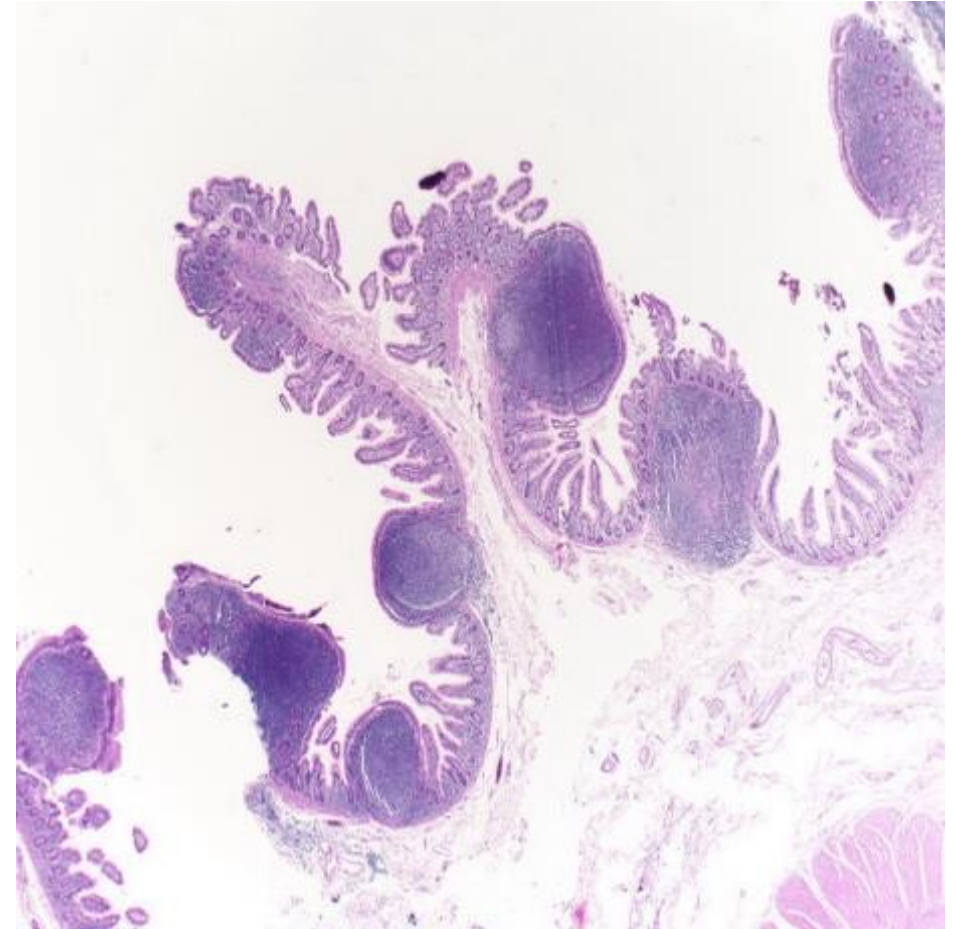

Tumours of Intestine

A) Benign

- **Adenomas=Neoplastic polyps**
- GIST
- Hemangioma, etc

B) Malignant tumors:

- **Adenocarcinoma**
- **Squamous cell carcinoma of** anal canal
- **Malignant melanoma** rarely in anus.
- **Malignant GIST.**
- **Lymphomas**
- **Carcinoid tumor**

are less frequent in LI

Neoplastic Polyps=Adenomas

Benign Tumors

1-Adenomas (Adenomatous Polyps):

- **Types**
  - Tubular adenoma
  - Villous adenoma (papillary surface)
  - Tubulo-villous adenoma
- **Features :**
  - Common in GIT
  - but **COLON** is commonest site
  - **All colonic Adenomas are PRECANCEROUS**

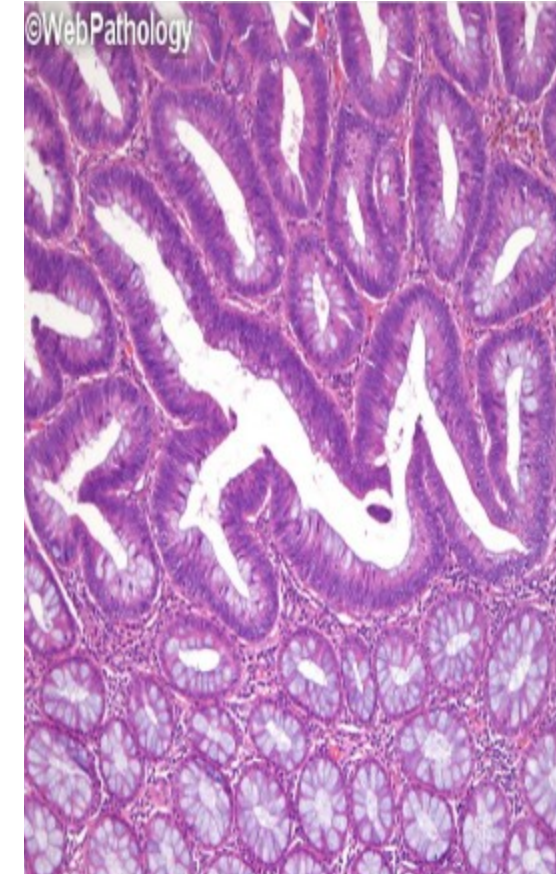
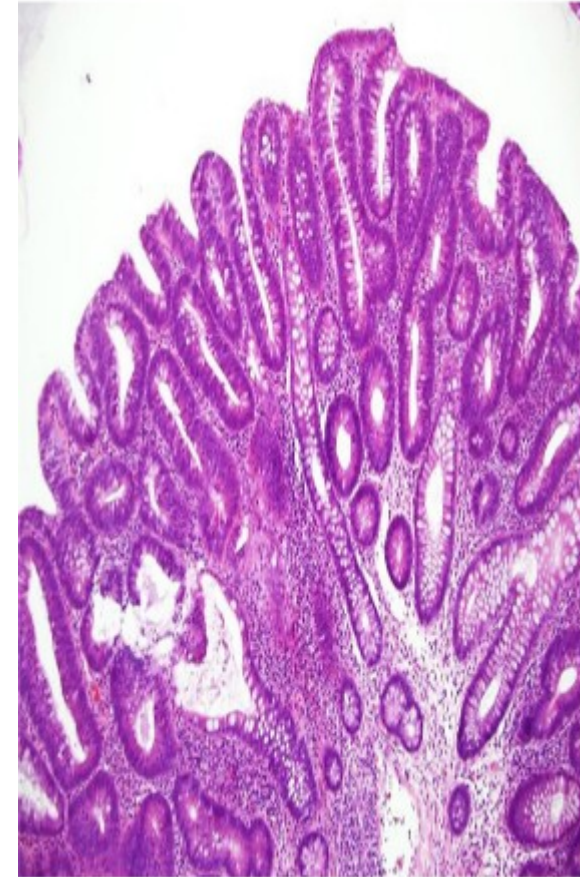
2-Familial Polyposis Syndromes

a. **Familial adenomatous polyposis (FAP)**

b. **Gardner syndrome**

c. **Turcot syndrome**

Neoplastic Polyps

Tubular Adenomatous Polyp

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https://library.med.utah.edu/WebPath/jpeg4/GI115.jpg

http://www.journalmc.org/tables/jmc1990w-g003.jpg

https://www.webpathology.com/image.asp?n=13&Case=221

Neoplastic Polyps

Villous Adenomatous Polyp

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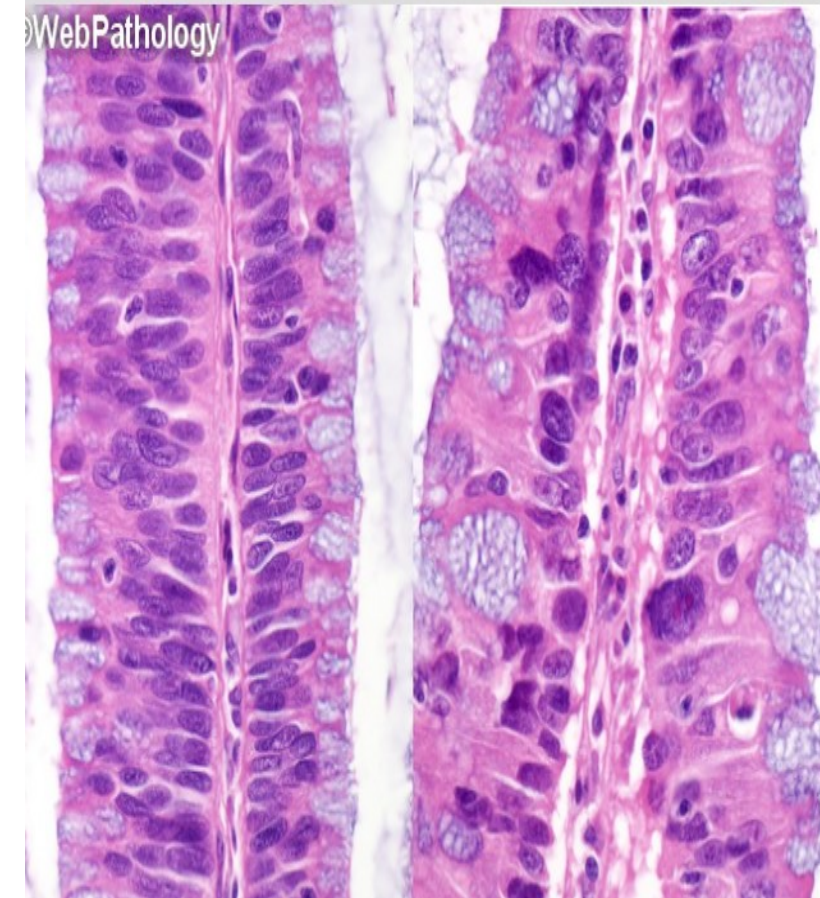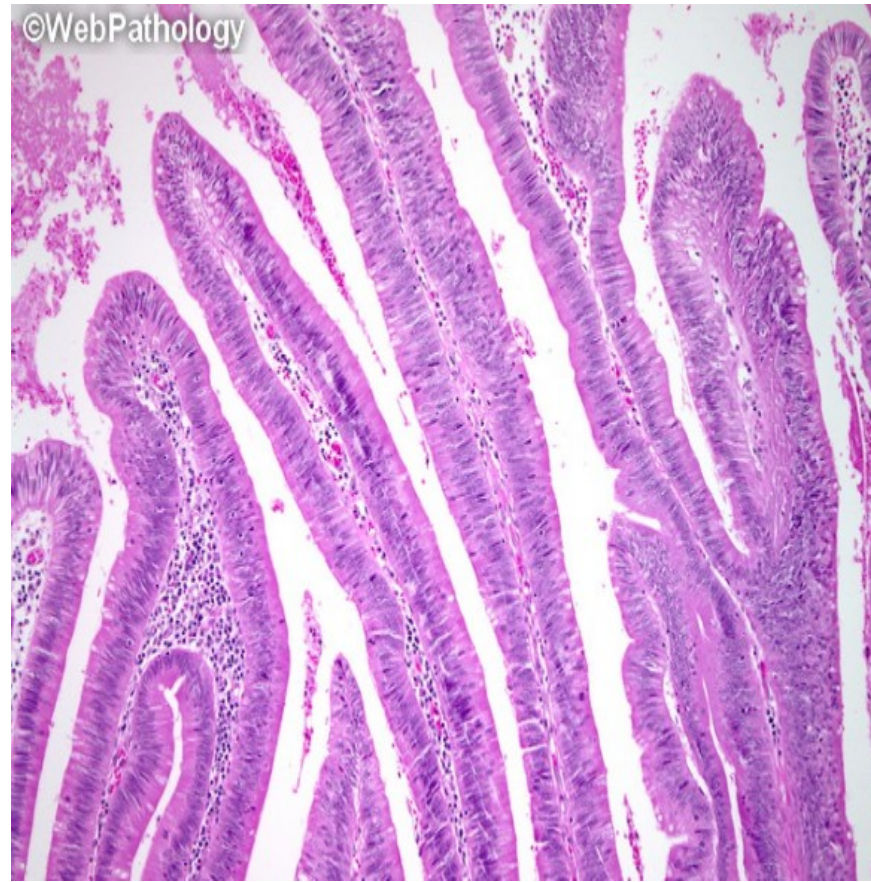
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https://www.webpathology.com/image.asp?n=40&Case=221

Neoplastic Polyps

-Adenomas (Adenomatous Polyps):

- **All Adenomas** show **varying degree of epithelial dysplasia**
- Risk of malignancy is correlated to:
  - **Size** (> 4 cm have 40% risk harbouring cancer)
  - **Severity of dysplasia**

Tubulovillous

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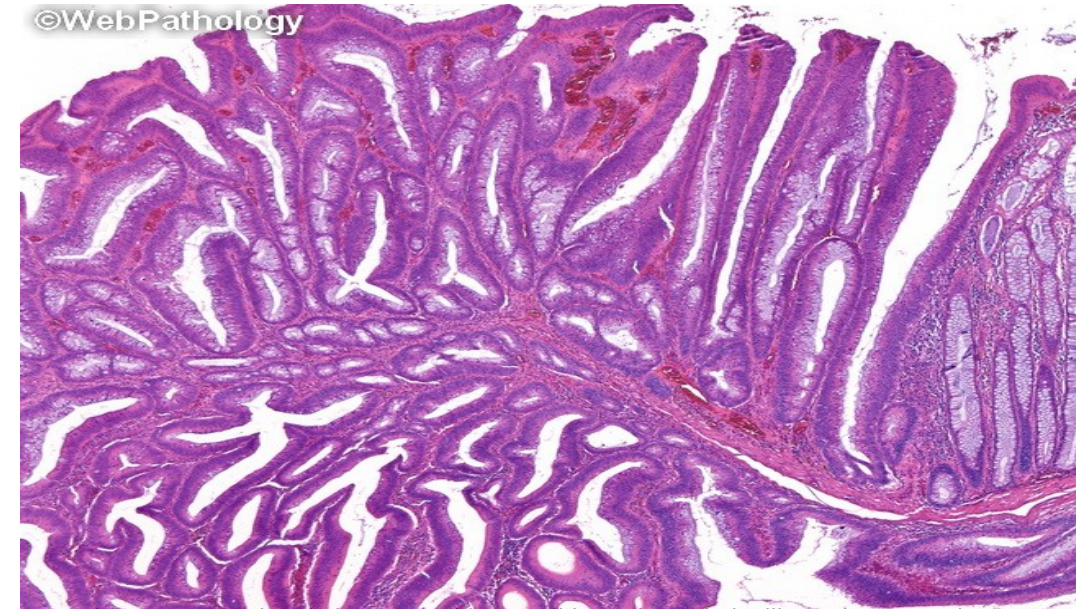
https://www.webpathology.com/slides-13/slides/Colon_TubuloVillousAdenoma2A.jpg

Neoplastic Polyps

-Adenomas (Adenomatous Polyps):

- **All Adenomas** show

  varying degree of epithelial dysplasia low (A) to high (B)
- **Pseudostratification -hperchromasia of nuclei-**

Normal

A

B

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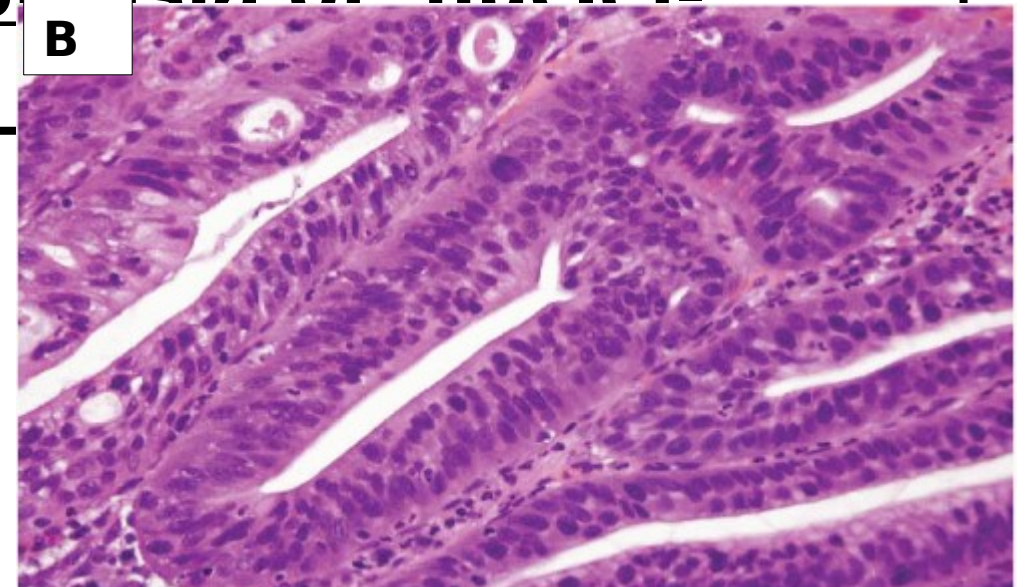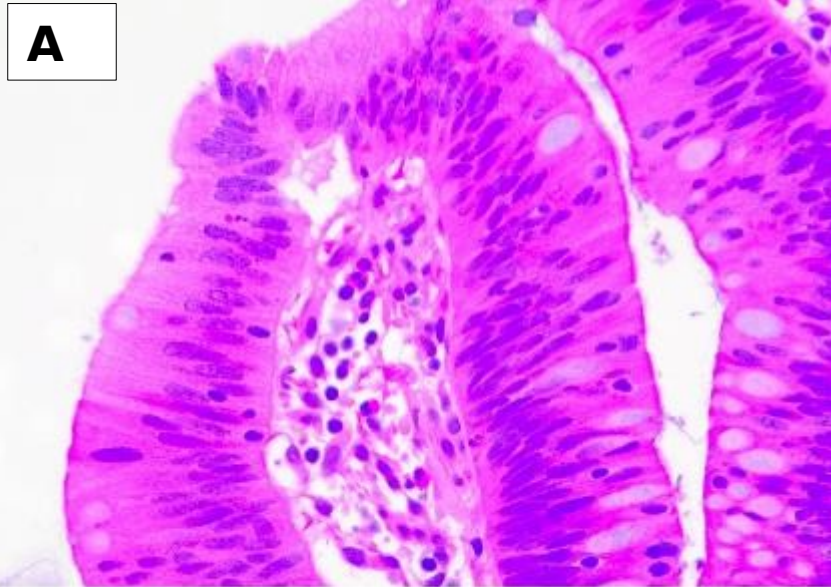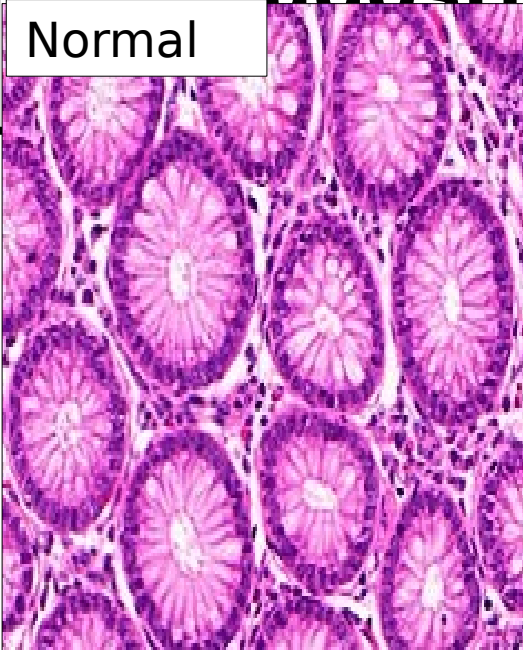
Neoplastic Polyps

Adenomas (Adenomatous Polyps):

	Tubular	**Villous**	**Tubulovillous**
Shape	Pedunculated solitary or multiple,	Sessile-solitary broad base papillary surface	
Mic	fibrovascular core +proliferated glands (tubules) with low grade dysplasia (may become high grade dysplasia)	thin tall finger - like processes formed of fibrovascular core lined by cells with low grade dysplasia(may become high grade dysplasia)	Both features
Risk of	+	**Highest risk** +++	++

Neoplastic Polyps

Which of these shows an adenomat
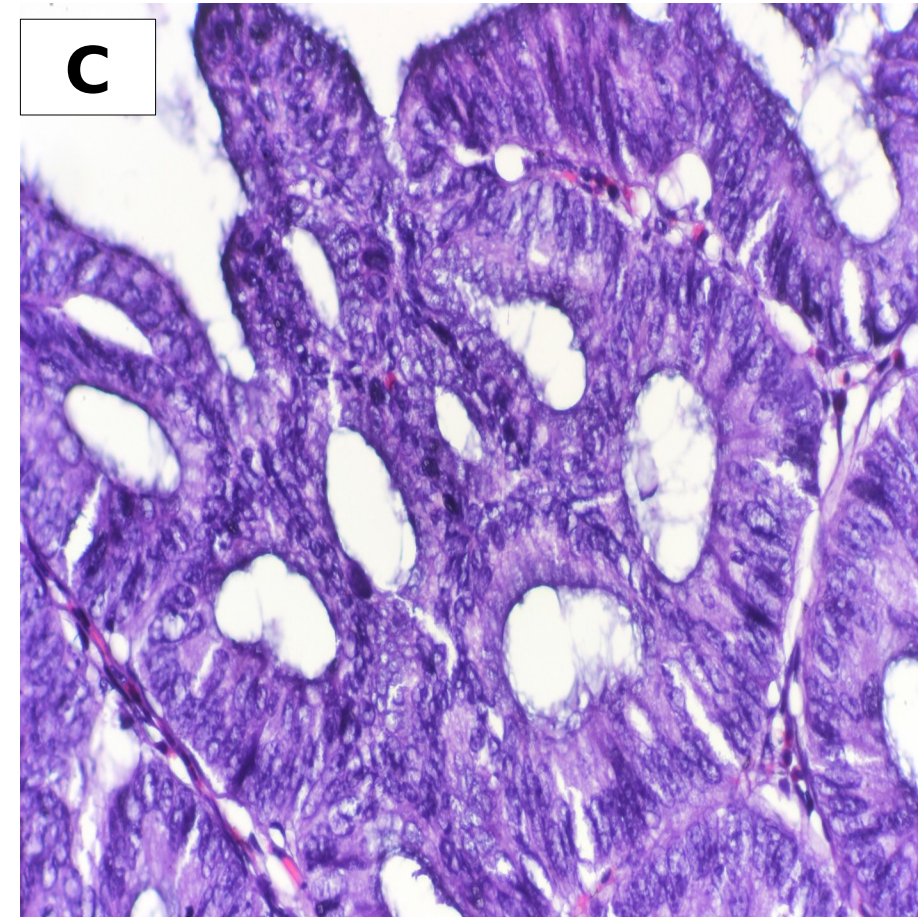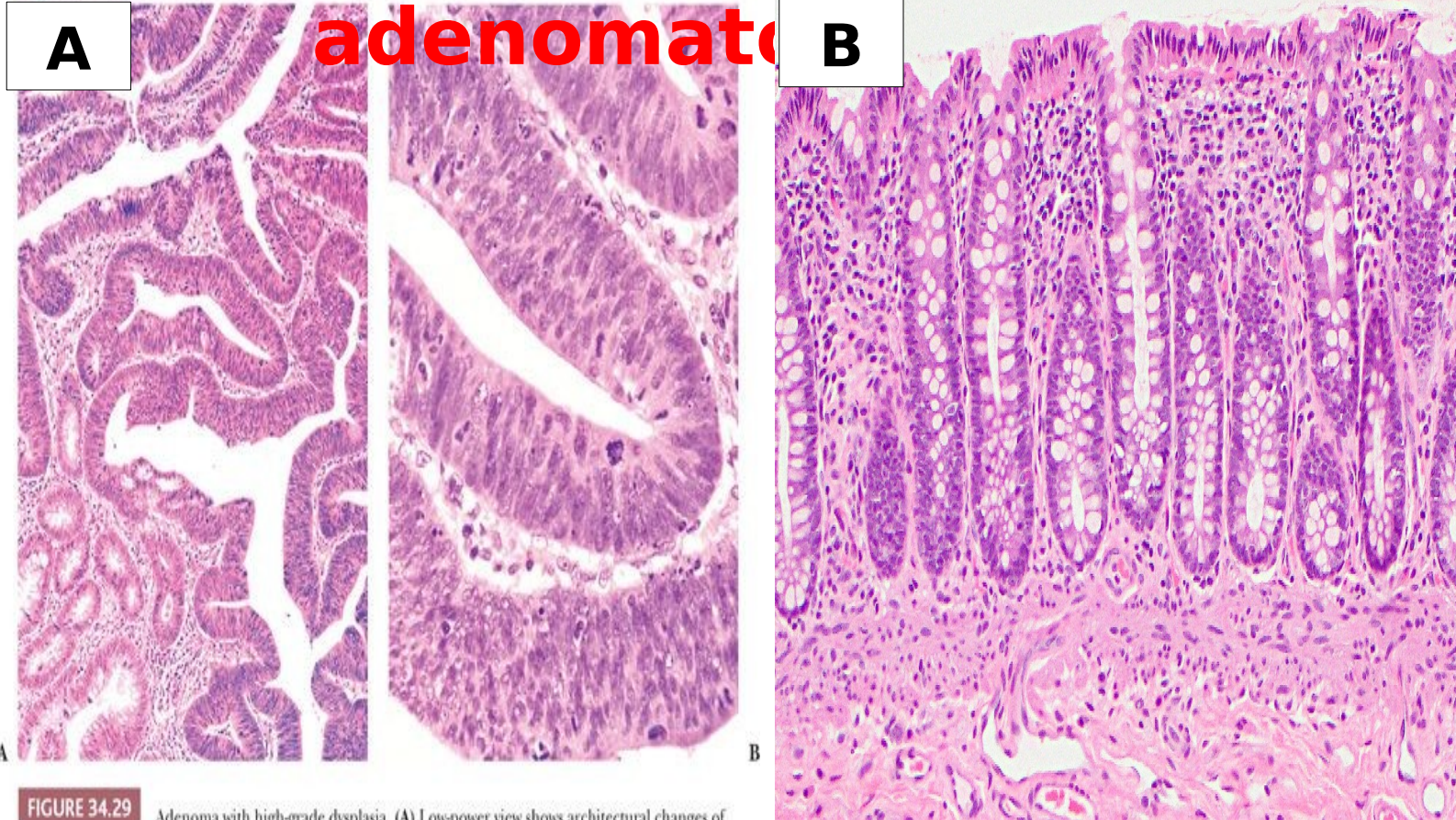
FIGURE 34.29 Adenoma with high-grade dysplasia. (A) Low-power view shows architectural changes of glandular buckling. (B) Higher power view shows dysplastic nuclei extending to the cell surface. Mitosis is also present at the surface. The changes in this lesion are those of high-grade dysplasia.

Neoplastic Polyps

2-Familial Polyposis Syndromes

a. **Familial adenomatous polyposis (FAP)**

- **=adenomatous polyposis coli (APC)**
  - Mutation of APC gene
  - Diagnosis made if **>100** adenomatous polyps on endoscopy.
  - Complications:

    by **age 40 ....100%** will develop an **invasive adenocarcinoma**
  - **Prophylactic colectomy** is standard

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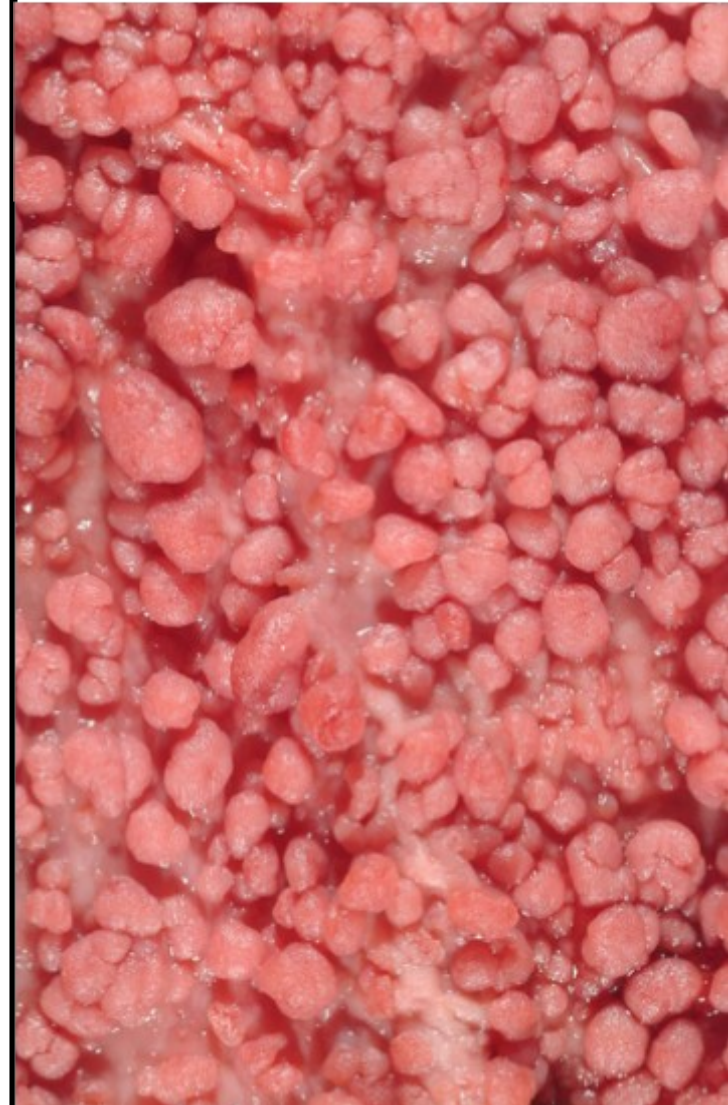

Familial Polyposis Syndromes

2-Familial Polyposis Syndromes

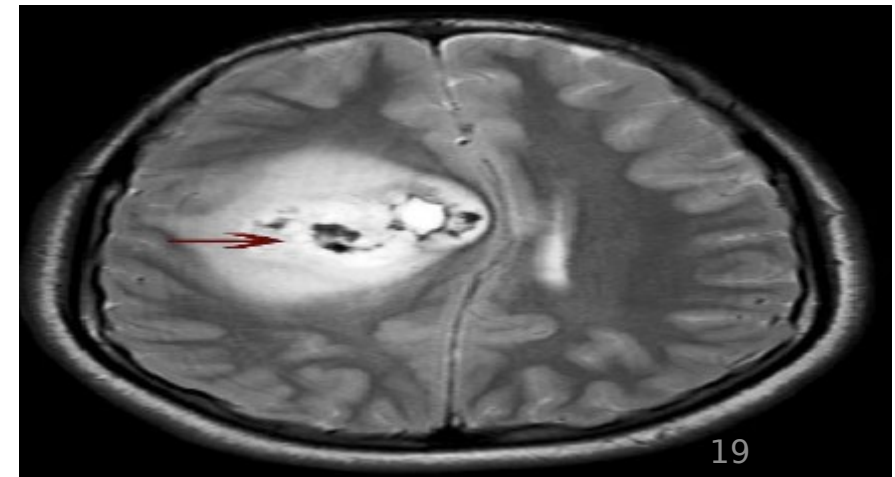
b.Gardner syndrome

Numerous **adenomatous polyps**

+ multiple osteomas, fibromatosis,
+epidermal inclusion cysts.

c. Turcot syndrome

Numerous **adenomatous polyps**

+ CNS tumors (gliomas).

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Intestinal Polypi (Quiz)

A polyp removed from a 54 year old male revealed tubules (glands) in a fibrovascular core **showing dysplastic stratified epithelial cells. Fingerlike villous projections are not seen. Which of the following is the most likely diagnosis**?

a. Inflammatory polyp
b. Lymphoid polyp
c. Tubular adenoma
d. Villous adenoma

Intestinal Polypi (Quiz)

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d. Villous adenoma

Carcinoma of Large Intestine

- Most common GIT malignancy - Common above 40 y
- Common at <u>recto sigmoid </u>colon
- **<u>Predisposing factors:</u>**
  - **<u>Adenomas (adenomatous polyps)</u>**
  - **<u>Hereditary </u>**
    - Familial Polyposis Syndromes

      In Hereditary Non polyposis

      colorectal cancer
    - **Diet:** ↑ high in red meat & animal fat,

Carcinoma of Large Intestine

Sites:

Rectum and sigmoid (75%)

Diagnosis Endoscopy with biopsy.

Gross Picture:

1- **Fungating mass** into the lumen

2- **Malignant ulcer**

3- **Infiltrating growth** that may lead to **annular stricture**

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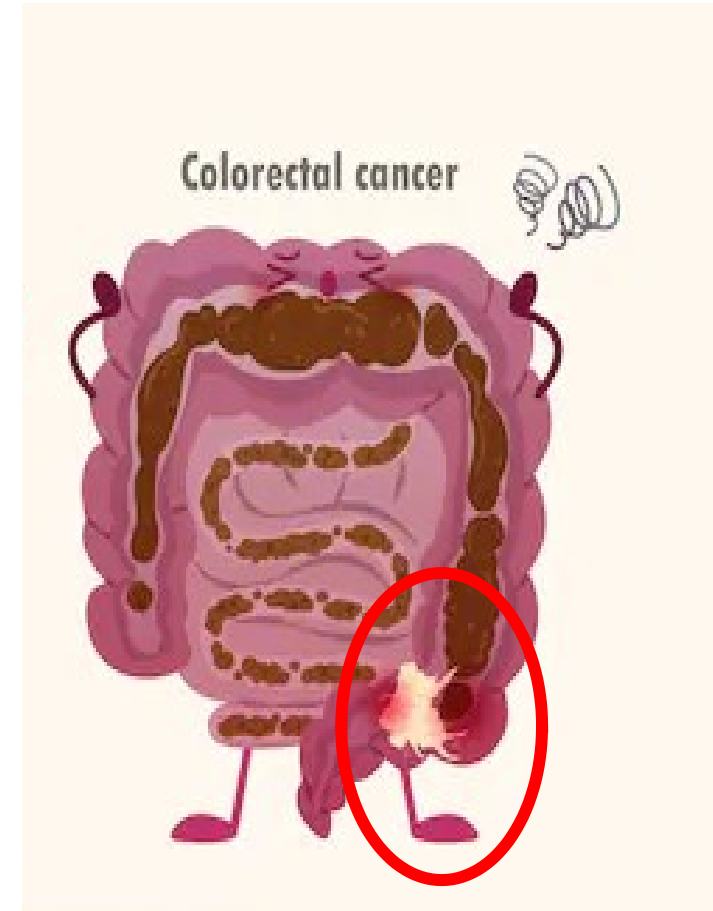
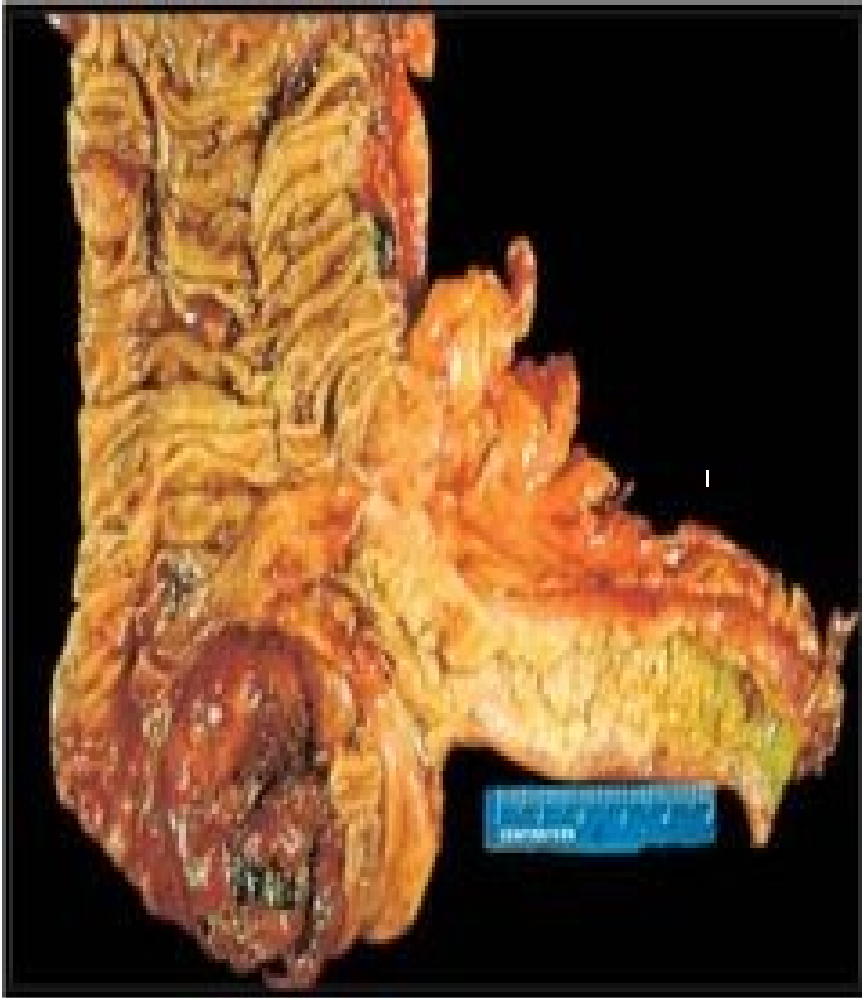

Carcinoma of Large Intestine

1-Fungating mass

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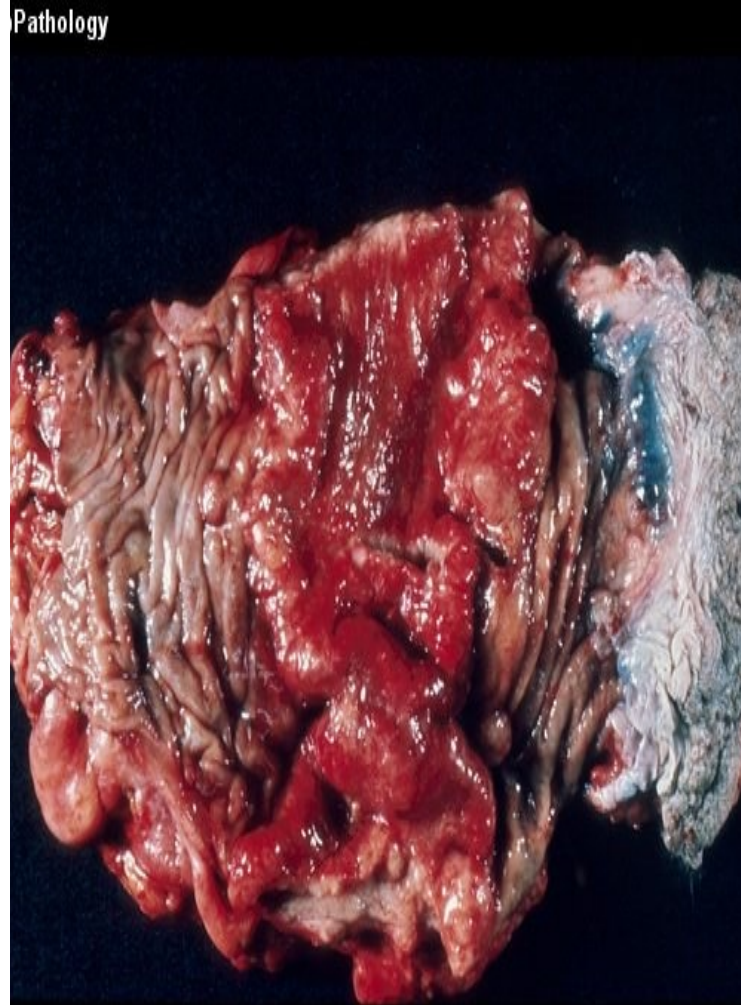
2-Malignant Ulcer

3-Infiltrating (Diffuse)

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Carcinoma of Large Intestine

https://66.media.tumblr.com/tumblr_m6phcwbdjw1ru4rx5o1_1280.jpg

http://www.pathology.pitt.edu/lectures/gi/colon-a/03.jpg

- LT sided colon cancer: Circumferential growth producing a
- >> **Apple core sign in radiology**

Carcinoma of Large Intestine

Mic:

1- **Adenocarcinoma:** Glands and acini of variable size and

shape lined by

malignant cells

2- **Mucinous adenocarcinoma** :Tumor cells and acini in extracellular
mucinous pools (pale blue material) forming > 50% of tumour tissue

3- **Signet ring carcinoma** :Diffuse infiltration by clear cells with intracellular

Carcinoma of Large Intestine

1-Adenocarcinoma

https://player.slideplayer.com/29/9435467/data/images/img4.jpg

2-Mucinous Adenocarcinoma

https://www.webpathology.com/image.asp?case=198&n=25

3-Signet ring carcinoma

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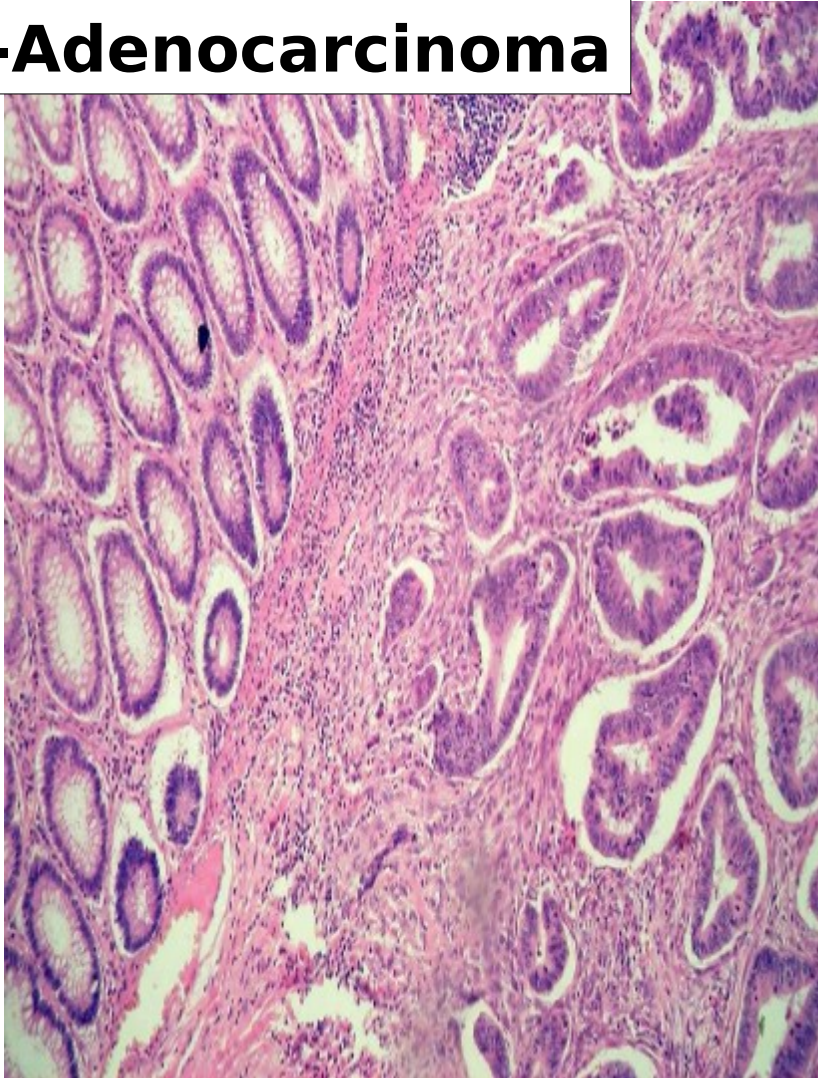
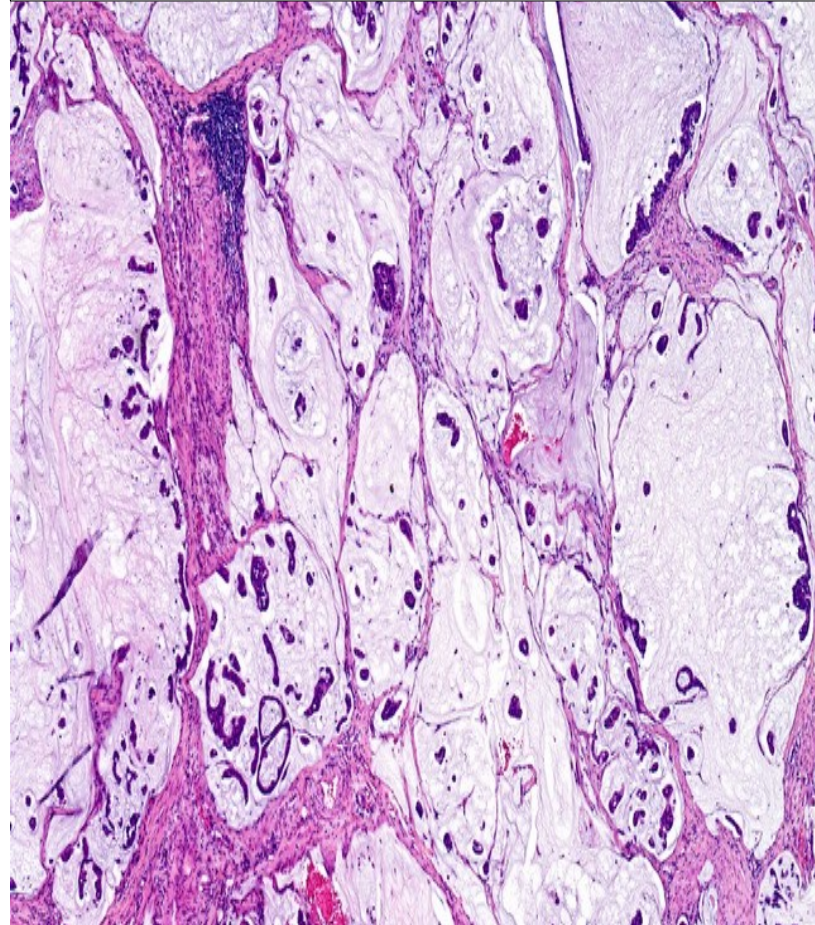
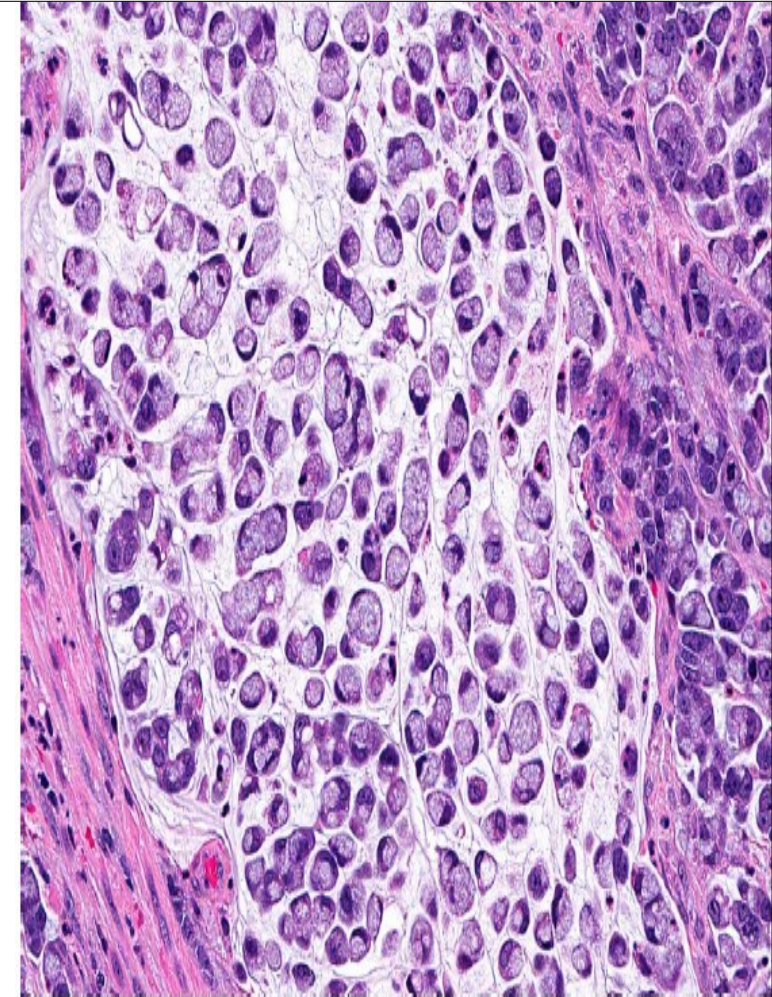
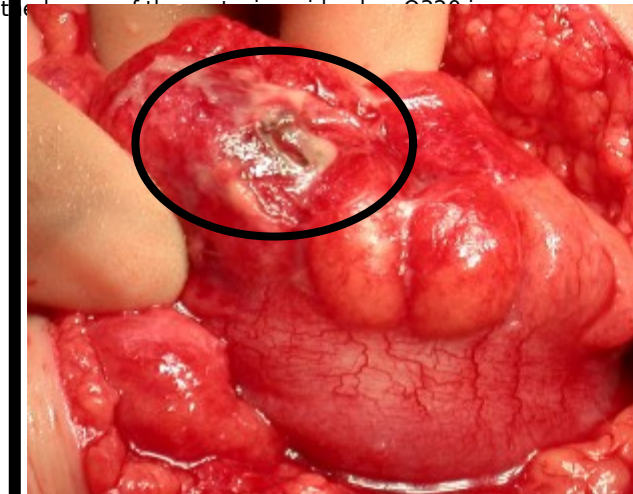

Carcinoma of Large Intestine

Complications:

1. Intestinal obstruction.
2. Bleeding per rectum (ulceration and necrosis)
3. Intestinal perforation & peritonitis.
4. Spread:
   - Direct: eg Urinary bladder
   - Lymphatic: Mesenteric LN etc.
   - Blood: Mainly to liver .
   - Transcoelomic: Lead to
     - Hemorrhagic ascites
     - Peritoneal metastasis
     - Bil Ovarian metastases>>Krukenberg

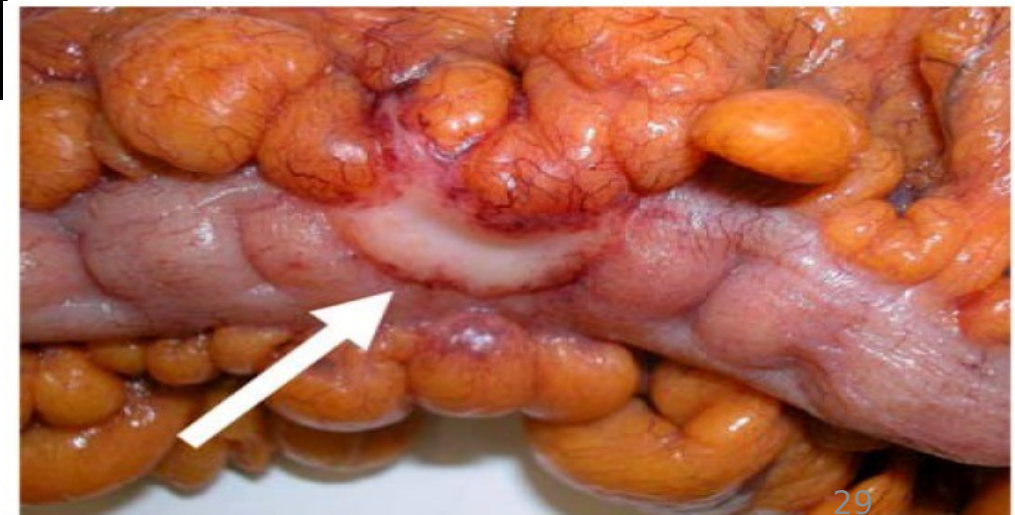
https://www.researchgate.net/publication/315320986/figure/fig1/AS:618277709574144@1524420301186/Colonoscopy-showing-a-large-mass-partially-occluding-

tps://casesnetwork.files.wordpress.com/2009/08/figure-2.jpg

Carcinoma of Large Intestine

Most important prognostic factor is <u>TNM stage</u> of the tumour which depends on

- Depth of tumour invasion (T)
- Extent of Nodal invasion(N)
- Extent of distant metastasis(M)

https://voices.uchicago.edu/grosspathology/files/2018/12/Colon2-2od8391.jpg

https://www.researchgate.net/figure/Macroscopic-image-of-colon-carcinoma-with-serosal-involvement-Note-the-thickened-central_fig4_258429394

Other malignant tumours of intestine

- **Gastro-Intestinal Stromal Tumour: (GIST) (refer to gastric tumours)**

- **Lymphoma:**
  - commonest malignant tumor in small intestine **but** uncommon in colon.
  - Commonly B-cell lymphoma.

Ulcers of intestine:

- **Ulcers of Small Intestine**
  - **Crohn’s disease**
  - **Rarely malignant ulcer**
  - Typhoid ulcers
  - Tuberculous ulcers

- **Ulcers of Large intestine**
  - **Ulcerative colitis**
  - **Malignant ulcer**
  - Amoebic ulcers
  - Bacillary dysentery ulcers
  - Bilharzial ulcers

Carcinoma of large intestine (Quiz)

Complete

1. Most important prognostic factor for colonic carcinoma is ....
2. Colonic carcinoma showing tumour cells and acini floating in pools of blue material is called ....

Carcinoma of large intestine (Quiz)

Complete

1. Most important prognostic factor for colonic carcinoma is

   Tumour stage which depends on

   - Depth of tumour invasion (T)
   - Extent of Nodal invasion(N)
   - Extent of distant metastasis(M

2. Colonic carcinoma showing tumour cells and acini floating in pools of blue material is called
Mucinous adenocarcinoma

Keypoints

- Intestinal polypi are classified as neoplastic and non-neoplastic

- Adenomatous polypi must show a dgree of dysplasia and are precancerous

- There are different types (variants) of colonic carcinoma

- Most important prognostic factor in colonic carcinoma is Tumour stage (TNM)

Thank You

Suggested Textbooks

- Kumar V, Abbas A, Aster J : In Robbins and Cotran pathologic basis of disease, 10th edition. Elsevier Saunders. Chapter 16
- http://library.med.utah.edu/WebPath/GIHTML/GI020.html
- http://www.pathologyoutlines.com/stomach.html